

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 03/40274

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 D21H21/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 D21H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 657 946 A (BRESLIN MICHAEL D ET AL) 14 April 1987 (1987-04-14) claims 1-12; examples 1-30	1-5, 14, 21, 22, 32, 46
X	US 4 606 773 A (NOVAK ROBERT W) 19 August 1986 (1986-08-19) claims 1-6; examples 1-9	1, 14, 21, 32, 46
X	DE 31 05 903 A (BASF AG) 9 September 1982 (1982-09-09) claims 1-6; examples 1,2; tables 1,2	1, 14, 21, 32, 46
X	EP 0 257 772 A (NIPPON OIL CO LTD ; SEIKO KAGAKU KOGYO CO LTD (JP); HOKUETSU PAPER MIL) 2 March 1988 (1988-03-02) claims 1-9; example 1 -/-	1, 14, 21, 32, 46

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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A document member of the same patent family

Date of the actual completion of the international search

26 May 2004

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PCT/US 03/40274

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 151 994 A (NALCO CHEMICAL CO) 21 August 1985 (1985-08-21) claims 1-20; examples 1-5	1,14,46
X,P	US 6 576 049 B1 (DAUPLAISE DAVID L ET AL) 10 June 2003 (2003-06-10) claims 1-18; examples 1-19	1,14,21, 32,46,47
A	WO 98/32920 A (COLMAN IVAN F G ; VANHECKE FRANCK (BE); BETZDEARBORN INC (US)) 30 July 1998 (1998-07-30) the whole document	1-47
A	WO 97/05330 A (CYTEC TECH CORP) 13 February 1997 (1997-02-13)	1-47
A	US 4 533 434 A (ADACHI YOSHIO ET AL) 6 August 1985 (1985-08-06) the whole document	1-47

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/40274

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4657946	A	14-04-1987	AT 66028 T 15-08-1991
		AU 577735 B2 29-09-1988	
		AU 3800485 A 01-08-1985	
		BR 8500339 A 03-09-1985	
		CA 1249388 A1 24-01-1989	
		CS 8500583 A2 16-09-1988	
		DE 3583688 D1 12-09-1991	
		DK 34085 A 28-07-1985	
		EP 0151994 A2 21-08-1985	
		ES 8609428 A1 16-12-1986	
		FI 850296 A ,B, 28-07-1985	
		GR 850215 A1 17-05-1985	
		MX 166763 B 02-02-1993	
		NZ 210958 A 30-08-1988	
		PL 251704 A1 08-10-1985	
US 4606773	A	19-08-1986	CA 1247810 A1 03-01-1989
DE 3105903	A	09-09-1982	DE 3105903 A1 09-09-1982
EP 0257772	A	02-03-1988	JP 1867351 C 26-08-1994
		JP 5077797 B 27-10-1993	
		JP 63028999 A 06-02-1988	
		DE 3767410 D1 21-02-1991	
		EP 0257772 A1 02-03-1988	
		FI 873177 A ,B, 23-01-1988	
		NO 873043 A ,B, 25-01-1988	
		US 4849055 A 18-07-1989	
EP 0151994	A	21-08-1985	AT 66028 T 15-08-1991
		AU 577735 B2 29-09-1988	
		AU 3800485 A 01-08-1985	
		BR 8500339 A 03-09-1985	
		CS 8500583 A2 16-09-1988	
		DE 3583688 D1 12-09-1991	
		DK 34085 A 28-07-1985	
		EP 0151994 A2 21-08-1985	
		ES 8609428 A1 16-12-1986	
		FI 850296 A ,B, 28-07-1985	
		GR 850215 A1 17-05-1985	
		JP 60246893 A 06-12-1985	
		MX 166763 B 02-02-1993	
		NZ 210958 A 30-08-1988	
		PL 251704 A1 08-10-1985	
		CA 1249388 A1 24-01-1989	
		US 4657946 A 14-04-1987	
US 6576049	B1	10-06-2003	AU 6149001 A 26-11-2001
		CA 2408695 A1 22-11-2001	
		EP 1290277 A2 12-03-2003	
		WO 0188262 A2 22-11-2001	
		US 2003205167 A1 06-11-2003	
WO 9832920	A	30-07-1998	AU 6095098 A 18-08-1998
		CA 2277962 A1 30-07-1998	
		WO 9832920 A1 30-07-1998	
		EP 0954635 A1 10-11-1999	
		JP 2001508507 T 26-06-2001	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/40274

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9832920	A		ZA 9800434 A	29-07-1998
WO 9705330	A	13-02-1997	AU 6597996 A	26-02-1997
			BR 9610142 A	02-02-1999
			CA 2227605 A1	13-02-1997
			CN 1192256 A	02-09-1998
			EP 0840822 A1	13-05-1998
			NO 980330 A	26-01-1998
			WO 9705330 A1	13-02-1997
			ZA 9606342 A	11-02-1997
US 4533434	A	06-08-1985	JP 58046196 A	17-03-1983
			JP 58045730 A	17-03-1983